

REQUEST FOR RECONSIDERATION

Claims 1 and 3-8 remain active in this application.

The claimed invention is directed to a packaged tea beverage.

Catechin containing packaged beverages are sought based on reports of favorable physiological effects. Low catechin concentrations typically found in tea extracts have led to investigations of packaged beverages having an enhanced catechin content. However, increased catechin content has yielded additional problems with astringency and appearance, especially after storage. Thus, catechin containing packaged beverages which have good astringency and bitterness characteristics and storage stability are sought.

The claimed invention addresses this problem by providing a packaged beverage comprising 0.01 to 1.0 wt. % of non-polymer catechins, quinic acid, a sweetener, 0.0001 to 0.5 wt. % of sodium ions and 0.001 to 0.2 wt % of potassium ions, at a pH of 2-6 and a ratio of quinic acid to non-polymer catechins of 0.0001 to 0.5, the content of oxalic acid, if any being limited to be not greater than 0.06 relative to the weight of non-polymer catechins. Applicants have discovered that concentrations of 0.0001 to 0.5 wt. % of sodium ions and 0.001 to 0.2 wt % of potassium ions to provide for a catechin containing beverage having good drinking characteristics as well as taste and color tone stabilities. Such a packaged beverage is nowhere disclosed or suggested in the cited references.

The rejections of claims 1, 3-6 and 8 under 35 U.S.C. §103(a) over Ohishi et al. U.S. 20030077374 in view of Kuznicki et al. U.S. 5,681,569, Ekanayake et al. U.S. H001628 H and Broz U.S. 2002/0197376 and of claim 7 under 35 U.S.C. §103 (a) as applied above, in further view of Tsai et al. U.S. 4,946,701 and *Teach Me Tea Cha* are respectfully traversed.

None of the cited references disclose or suggest a packaged beverage containing 0.0001 to 0.5 wt. % of sodium ions and 0.001 to 0.2 wt % of potassium ions nor long term drinkability or an improved storage stability resulting there from.

Ohishi et al. now U.S. 7,029,718 describes a beverage containing non-polymer catechins and quinic acid and as noted on page 5 of the official action, **fails** to describe a concentration of potassium ions of 0.001 to 0.2 wt.%.

The examiner notes paragraph [0039] and its citation for the inclusion of fruit juice, which may contain potassium ions as basis to assert that the claimed range of 0.001 to 0.2 wt. % is obvious. The examiner has further cited to Kuznicki et al. as describing an electrolyte component of a cellular hydration beverage as containing 0.005 to 0.008 wt. % of potassium (column 5, lines 11-18).

However, there is no suggestion that a concentration of potassium ion of from 0.001 to 0.2 wt.% would provide for enhanced long-term drinkability and storage stability.

As evidence of the improved long-term drinkability and storage stability resulting from a potassium ion concentration as claimed, the examiner's attention is directed to the data appearing on pages 26-29, Tables 1 and 2, a portion of the data being reproduced below:

[Table 1]

| Formulations | Ex. 1 | Ex. 2 | Ex. 3 |
|--|---------|---------|---------|
| Green tea extract A | 1.00 | 0.30 | 1.00 |
| Green tea extract B | - | - | - |
| Green tea extract C | - | - | - |
| Quinic acid | - | - | - |
| Ascorbic acid | 0.03 | 0.03 | 0.03 |
| Citric acid | 0.2 | 0.2 | 0.2 |
| Trisodium citrate | 0.1 | 0.1 | 0.1 |
| Fruit extract | - | - | 2.00 |
| Glucose | - | - | - |
| Artificial sweetener | 5.00 | 5.00 | 3.00 |
| Sodium chloride | 0.05 | 0.05 | 0.05 |
| Potassium chloride | 0.02 | 0.02 | 0.02 |
| Flavor ingredient | 0.10 | 0.10 | 0.10 |
| Deionized water | Balance | Balance | Balance |
| Total amount | 100 | 100 | 100 |
| pH of beverage | 3.5 | 3.5 | 3.5 |
| Non-polymer catechins (wt%) | 0.22 | 0.07 | 0.22 |
| Quinic acid/non-polymer catechins ratio | 0.020 | 0.020 | 0.020 |
| Oxalic acid/non-polymer catechins ratio | 0.01 | 0.01 | 0.01 |
| Na content in beverage (mg/100 mL) | 47 | 47 | 47 |
| K content in beverage (mg/100 mL) | 44 | 18 | 44 |
| Long-term drinkability | A | A | A |
| Stability of bitterness and astringency | A | A | A |
| Feeling as the beverage passed down the throat | A | A | A |
| Color tone stability | A | A | A |

[Table 1 (Cont'd)]

| Formulations | Ex. 4 | Ex. 5 | Ex. 6 |
|--|---------|---------|---------|
| Green tea extract A | 1.00 | - | 4.00 |
| Green tea extract B | - | 0.08 | - |
| Green tea extract C | - | 0.20 | - |
| Quinic acid | - | - | - |
| Ascorbic acid | 0.03 | 0.03 | 0.03 |
| Citric acid | 0.2 | 0.2 | 0.2 |
| Trisodium citrate | 0.1 | 0.1 | 0.1 |
| Fruit extract | - | - | - |
| Glucose | 2.00 | 2.00 | 7.00 |
| Artificial sweetener | 3.00 | 3.00 | 5.00 |
| Sodium chloride | 0.05 | 0.05 | 0.05 |
| Potassium chloride | 0.02 | 0.02 | 0.02 |
| Flavor ingredient | 0.10 | 0.10 | 0.10 |
| Deionized water | Balance | Balance | Balance |
| Total amount | 100 | 100 | 100 |
| pH of beverage | 3.5 | 3.4 | 3.5 |
| Non-polymer catechins (wt%) | 0.22 | 0.19 | 0.89 |
| Quinic acid/non-polymer catechins ratio | 0.020 | 0.023 | 0.020 |
| Oxalic acid/non-polymer catechins ratio | 0.01 | 0.009 | 0.01 |
| Na content in beverage (mg/100 mL) | 47 | 47 | 47 |
| K content in beverage (mg/100 mL) | 44 | 20 | 151 |
| Long-term drinkability | A | A | B |
| Stability of bitterness and astringency | A | A | A |
| Feeling as the beverage passed down the throat | A | A | A |
| Color tone stability | A | A | B |

[Table 2]

| Formulations | Comp. Ex. 1 | Comp. Ex. 2 | Comp. Ex. 3 |
|--|----------------|----------------|----------------|
| Green tea extract A | 1.00 | - | 1.00 |
| Green tea extract B | - | - | - |
| Green tea extract C | - | 0.23 | - |
| Quinic acid | - | - | - |
| Ascorbic acid | - | 0.03 | 0.03 |
| Citric acid | - | 0.2 | 0.2 |
| Trisodium citrate | 0.33 | 0.1 | 0.1 |
| Fruit extract | - | - | - |
| Glucose | - | - | - |
| Artificial sweetener | 5.00 | 5.00 | 5.00 |
| Sodium chloride | 0.05 | 0.05 | 2.5 |
| Potassium chloride | 0.02 | 0.02 | 0.02 |
| Flavor ingredient | 0.10 | 0.10 | 0.10 |
| Deionized water | Balance | Balance | Balance |
| Total amount | 100 | 100 | 100 |
| pH of beverage | 6.5 | 3.5 | 3.5 |
| Non-polymer catechins (wt%) | 0.22 | 0.19 | 0.22 |
| Quinic acid/non-polymer catechins ratio | 0.020 | 0.00001 | 0.020 |
| Oxalic acid/non-polymer catechins ratio | 0.01 | 0.00001 | 0.01 |
| Na content in beverage (mg/100 mL) | 108 | 47 | 1011 |
| K content in beverage (mg/100 mL) | 44 | 6 | 44 |
| Long-term drinkability | B | C | D |
| Stability of bitterness and astringency | D | C | C |
| Feeling as the beverage passed down the throat | D | B | D |
| Color tone stability | D | B | C |

[Table 2 (Cont'd)]

| Formulations | Comp. Ex. 4 | Comp. Ex. 5 | Comp. Ex. 6 |
|--|----------------|----------------|----------------|
| Green tea extract A | 1.00 | 1.00 | - |
| Green tea extract B | - | - | 0.35 |
| Green tea extract C | - | - | - |
| Quinic acid | - | - | 2.0 |
| Ascorbic acid | 0.03 | 0.03 | 0.03 |
| Citric acid | 0.2 | 0.2 | 0.2 |
| Trisodium citrate | 0.1 | 0.1 | 0.1 |
| Fruit extract | - | - | - |
| Glucose | - | 22.00 | - |
| Artificial sweetener | 5.00 | 3.00 | 5.00 |
| Sodium chloride | 0.05 | 0.05 | 0.05 |
| Potassium chloride | 0.9 | 0.02 | 0.02 |
| Flavor ingredient | 0.10 | 0.10 | 0.10 |
| Deionized water | Balance | Balance | Balance |
| Total amount | 100 | 100 | 100 |
| pH of beverage | 3.5 | 3.5 | 3.5 |
| Non-polymer catechins (wt%) | 0.22 | 0.22 | 0.12 |
| Quinic acid/non-polymer catechins ratio | 0.020 | 0.020 | 16.7 |
| Oxalic acid/non-polymer catechins ratio | 0.01 | 0.01 | 0.06 |
| Na content in beverage (mg/100 mL) | 47 | 47 | 47 |
| K content in beverage (mg/100 mL) | 516 | 44 | 27 |
| Long-term drinkability | D | C | C |
| Stability of bitterness and astringency | C | C | D |
| Feeling as the beverage passed down the throat | D | D | D |
| Color tone stability | C | D | D |

Comparative example 4, having a non-polymer catechin content, quinic acid/non-polymer catechin ratio and sodium ion content as claimed, but having a potassium ion content of 0.516%, in excess of the claimed 0.2 wt. % was assessed as “not suited for drinking” (D) by thirty male monitors, ingesting the beverage for one month. Further the stability to bitterness and astringency was assessed as “changed “ (C), the throat feeling was assessed as “poor” ((D) and the color tone stability was assessed as “changed” (C).

In contrast, each of examples 1-6 in which the non-polymer catechin content, quinic acid/non-polymer catechin ratio, sodium ion content as claimed, and potassium ion content

was as claimed, were assessed as “suitable” or “suited a little” (A) and (B) for drinkability. The stability to bitterness and astringency was assessed as “not changed “ (A), the throat feeling was assessed as “good” (A) and the color tone stability was assessed as “not changed” (A) or “slightly changed” (B). Thus, by ensuring a potassium ion concentration of from 0.001 to 0.2 wt.%, applicants observe measurable improvements in drinkability, bitterness and astringency stability, throat feel and color tone stability.

Such improved performance could not have been suggested by the cited references which merely suggest inclusion of potassium ions in the composition, but does not suggest that within the claimed range that there would be an enhancement in performance.

None of the remaining references have been cited for a disclosure of a potassium ion content and accordingly could not provide any expectation of improved drinkability, taste stability, throat feel and color tone stability resulting from a concentration of potassium ions of 0.001 to 0.2 wt.%.

Therefore, the claimed invention would not have been obvious over the cited references and withdrawal of the rejections under 35 U.S.C. §103(a) is respectfully requested.

The rejection of claims 1-8 under 35 U.S.C. §112, second paragraph is respectfully traversed.

Applicants respectfully submit that the metes and bound of claim 1 would be clear to those of ordinary skill in the art as to the wt. basis for the components of non-polymer catechins, sweetener, sodium ions and potassium ions.

It is noted that the claim recited that the packaged beverage contains specific components in specified wt.% amounts. Those of ordinary skill in the art would readily appreciate that the plain meaning of the term wt.% is based on the wt. of the packaged beverage. This interpretation is reinforced by applicants’ specification disclosure on page 5, lines 2-3, page 8, lines 5-9 and page 11, lines 13-15 which identify the packaged beverage as

containing specific wt.% of each component. Thus, since the metes and bounds of the claimed invention is clear to those of ordinary skill in the art, withdrawal of this ground of rejection is respectfully requested.

As to the examiner's concern of the term "non-tea" beverage, applicants note that this term is used in the art with reference to non-polymer catechin containing beverages as evidenced by claim 2 of the cited Ohishi et al reference and accordingly, the rejection of claim 3 is improper and must be withdrawn.

As to claim 5, applicants respectfully submit that the content of quinic acid to non-polymer catechin falls within the range of 0.0001 to 0.16 and that the use of the term "such that" makes clear that the claim is so limited. Further the examiner's citation to M.P.E.P. §§ 2173.05(d) cites to examples where the term "such as" has been objected to but further admonishes that there is no *per se* rule. The term "such that" is not "such as." As the metes and bounds of claim 5 are clear to those of ordinary skill in the art, withdrawal of the rejection under 35 U.S.C. §112, second paragraph is respectfully requested.

The provisional rejections of claims 1, 3-5 and 7-8 over claims 1 and 3-10 of U.S. 10/583,558 in view of Ohishi et al., of claims 1, 3-5 and 7-8 over claims 1-4, 8, 9, 11-14, 18, 21, 25-29 of U.S. 11/258,892 in view of Ohishi et al. and of claims 1, 3-6 over claims 1-2 and 6-11 over U.S. 10/583,556 in view of Ohishi et al. all under the grounds of non-statutory obviousness-type double patenting are addressed by the filing of a terminal disclaimer, disclaiming the terminal portion of any patent issuing from the above-identified application which would extend beyond the full statutory term of any of any patents issuing from any of U.S. 10/583,558, 11,258,892 or 10/583,556.

Applicants submit that this application is now in condition for allowance and early notification of such action is earnestly solicited.

Respectfully submitted,

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